

DETAILED ACTION

The amendment filed on 02/02/2011 has been entered. Claims 21-45 are pending in this application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 21-26, 29-30, 33-38, 41-45, are rejected under 35 U.S.C. 102(e) as being anticipated by Lof et al. [US 20040136494 A1, hereafter Lof'494].

As per Claims 21, and 43, Lof'494 teaches a liquid immersion exposure apparatus (**See fig. 1**) that includes an exposure station and a measuring station **30** and exposes a substrate W via a liquid at the exposure station (**Para 22**) comprising:

A plurality of movable members each of which that holds a substrate and is movable between the exposure station and the measuring station (**Para 28**);

An optical member PL disposed at the exposure station which irradiates an exposure beam to the substrate held by a first one of the movable members at the exposure station (**Para 28**); and

A measurement device **30** positioned at the measuring station, which measures a second one of the movable members or a substrate held by the second movable member at the measuring station, wherein a liquid is partially disposed on the second movable member or on the substrate held by the second movable member, at the measuring station **(Para 24 and 28)**.

As per Claim 22, Lof'494 teaches the measurement at the measuring station is performed during the exposure at the exposure station **(Para 28)**.

As per Claim 23, Lof'494 teaches the measuring station comprises a surface detection device that measures, via a liquid, a surface information of the substrate held by the second movable member **(Para 26-27, alignment measuring locations in the x, y and Rx directions)**.

As per Claim 24, Lof'494 teaches a member having a liquid contact surface substantially equivalent to the liquid contact surface of the optical member, wherein a first immersion area is formed between the optical member and the substrate at the exposure station, and a second immersion area is formed between the contact member and the substrate at the measuring station **(Para 22-24, wherein the measurement takes place through the liquid different from the liquid supplied at the exposure station)**.

As per Claim 25, Lof'494 teaches a measurement device that measures a force exerted by the liquid upon the second movable member or on the substrate held by the second movable member **(Para 24 and 26)**.

As per Claim 26, Lof'494 teaches a surface position of the substrate at the exposure station is compensated based on the measurement result of the measurement device (**Para 28**).

As per Claim 29, Lof'494 teaches surface information of the substrate is obtained in accordance with the position of an immersion area in the surface direction of the substrate (**Para 24**).

As per Claim 30, Lof teaches the measuring station comprises a first mark detection device that measures, via liquid, an alignment mark on the substrate held by the second movable member and also measures, via liquid, a fiducial mark provided on the second movable member (**Para 56**).

As per Claim 33, Lof'494 teaches the measurement is performed via the liquid (**Para 24**).

As per Claim 34, Lof'494 teaches the substrate on the first movable member that was measured at the measuring station is exposed at the exposure station (**Para 24**).

As per Claims 42 and 44, Lof'494 teaches a liquid immersion exposure apparatus (**See fig. 1**) that includes an exposure station and a measuring station (**See fig. 2**) and exposes a substrate via a liquid at the exposure station comprising:

A plurality of movable members each of which holds a substrate and is movable between the exposure station and the measuring station (**Para 28**);

An optical member **PL** disposed at the exposure station which irradiates an exposure beam to the substrate held by a first one of the movable members at the exposure station;

a first liquid supply device that forms an immersion area on the substrate held by the first movable member at the exposure station; and a second liquid supply device that forms an immersion area partially on a substrate held by a second one of the movable member at the measuring station (**Para 22-24 and 28**).

As per Claims 35-38, 41, and 45, Lof'494 the method as claimed, because under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claims, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. See *In re King*, 801 F.2d 1324,231 MPEP 2112.02".

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 31-32, and 39-40, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lof'494 as applied in claim 21 above in view of Lof et al. [US 20040160582 A1, hereafter Lof'582].

As per Claim 31, Lof'494 teaches the liquid immersion exposure apparatus according to claim 21.

Lof'494 does not explicitly teach a part of the each of a plurality of movable members that contacts with a liquid is provided with liquid repellency treatment.

Lof'582 teaches a substrate table with a hydrophobic layer which may be any material that exhibits hydrophobic properties (**Para 25**).

Therefore, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to apply a hydrophobic layer of Lof'582 on a plurality of movable members of Lof'494 that contacts with a liquid in order to confine the liquid in the desired area.

As per Claim 32, Lof'582 teaches a wafer table that has a surface that is substantially flush with the surface of the substrate held by the movable member around the circumference of the substrate (**See fig. 4**).

As per Claims 39-40, Lof'494 in view of Lof'582 teaches the method as claimed, because under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claims, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it

can be assumed the device will inherently perform the claimed process. See *In re King*, 801 F.2d 1324,231 MPEP 2112.02”.

Allowable Subject Matter

5. Claims 27-28, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to the Office action mailed on 09/02/2010 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 02/02/2011 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mesfin T. Asfaw whose telephone number is 571-270-5247. The examiner can normally be reached on Monday to Friday, 7:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mesfin T Asfaw/
Examiner, Art Unit 2882

/Edward J Glick/
Supervisory Patent Examiner, Art Unit 2882